

DC13101 | E10i-494

Instructions for Use

E10i-494 is a branched ionizable lipid designed to enhance the delivery of mRNA and CRISPR-Cas9 ribonucleoprotein (RNP) complexes. It belongs to the Branched Endosomal Disruptor (BEND) lipid family, which features terminal branching to improve endosomal escape and cellular uptake. E10i-494 demonstrated exceptional performance in T cell engineering, achieving >80% transfection efficiency in primary human T cells. This is significantly higher than the ~70% efficiency achieved by the linear lipid C14-494. The isopropyl branch enhances the lipid's ability to penetrate and disrupt endosomal membranes, leading to improved release of mRNA and RNPs into the cytoplasm. Despite its high efficiency, E10i-494 exhibits low cytotoxicity, making it suitable for therapeutic applications. E10i-494 is particularly effective for delivering mRNA to T cells, making it a promising tool for CAR-T cell therapy and other immunotherapies. Its ability to deliver CRISPR-Cas9 RNPs efficiently also makes it suitable for in vivo gene editing applications.

Product information

CAS No.	Not available
Chemical Name	E10i-494
Formula	C ₈₉ H ₁₈₃ N ₅ O ₇
M.Wt	1,435.5
Purity	>98%
Storage	Original product: up to 1 year under the storage conditions stated on the vial, kept tightly sealed. Stock solutions: aliquots at -20°C, generally up to one month.
Shipping condition	Ships from Shanghai. Pure lipid is stable during ice-pack transport.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

A complete product-specific formulation has not been verified. No standard ratio is substituted.

N/P ratio	Not reported in the verified record
Cargo	Not available in the verified record
Administration route	Not available in the verified record
Animal model	Not available in the verified record
Formulation process	Not available in the verified record

N/P is a nitrogen-to-phosphate molar ratio. Lipid:cargo mass ratio is a different quantity and must not be used as N/P.

Stock-solution preparation table

Calculated using product-page MW: 1435.5 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	6.966 mL	1.393 mL	0.697 mL
25 mg	17.416 mL	3.483 mL	1.742 mL
50 mg	34.831 mL	6.966 mL	3.483 mL
100 mg	69.662 mL	13.932 mL	6.966 mL
250 mg	174.155 mL	34.831 mL	17.416 mL

Volume (mL) = mass (mg) × 1000 / [MW (g/mol) × concentration (mM)]. Mathematical conversions only; not measured solubility. Confirm solvent compatibility and the exact material before preparation.

Handling & storage

Provided that storage conditions are as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 1 year.

Wherever possible, prepare and use solutions on the same day. If stock solutions must be prepared in advance, store them as aliquots in tightly sealed vials at -20°C. Generally, these will be usable for up to one month.

Before use, and prior to opening the vial, allow the product to equilibrate to room temperature for at least 1 hour.

References

Not available